

Solar Permitting and Structural Engineering Considerations: Streamlining & Standardizing the Process for Routine Rooftop Installations

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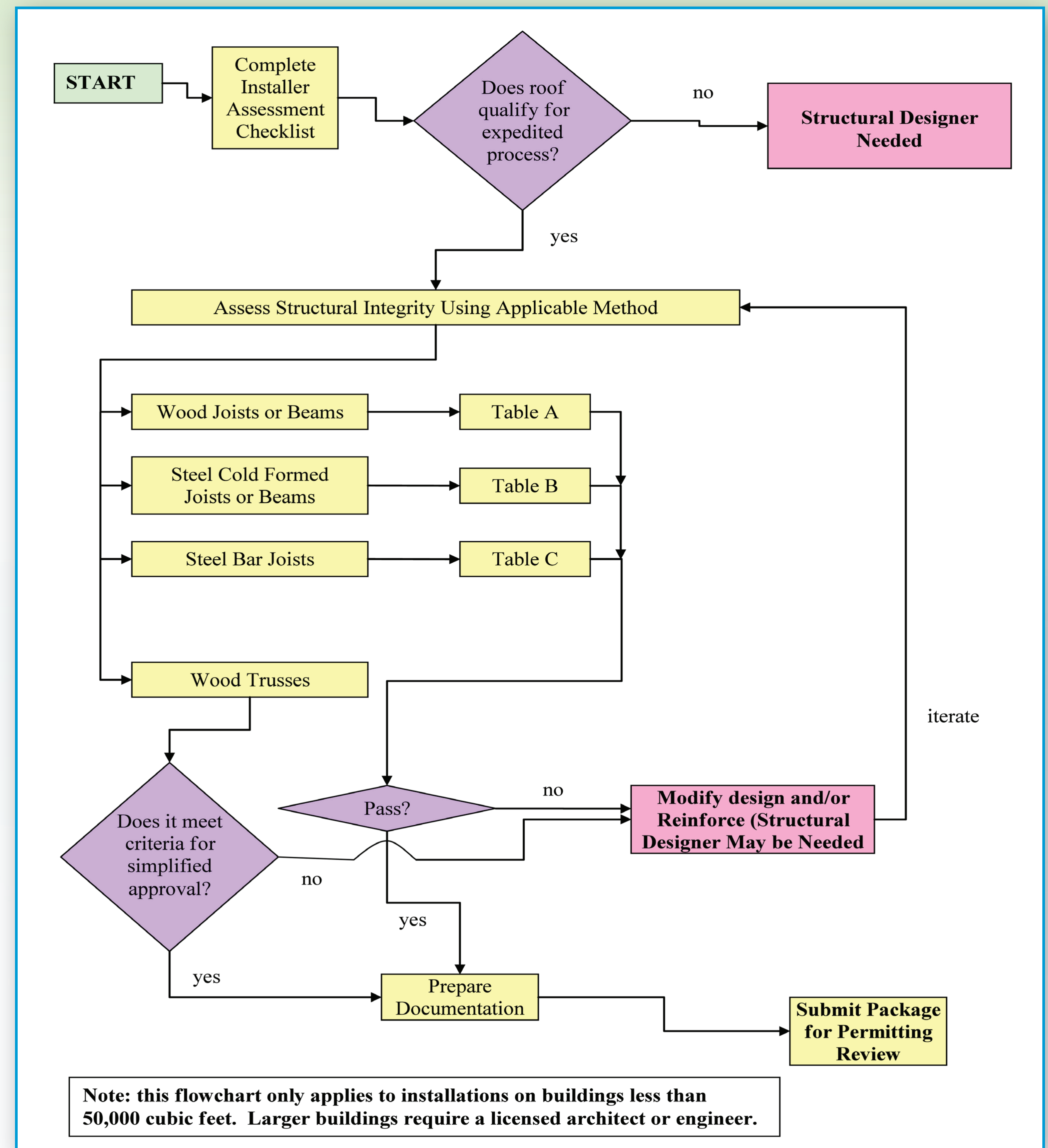
Goals:

- Ensure structural integrity of solar installations
- Reduce time and expense associated with structural permitting of solar installations
 - For installers
 - For permitting and inspection officials
- Engage standards community
 - Electrical issues well-addressed
 - Structural issues not adequately addressed

Initial focus is on roof-mounted systems

Structural Guidance Manual / Training Workshop for Simple Solar Rooftop Installations

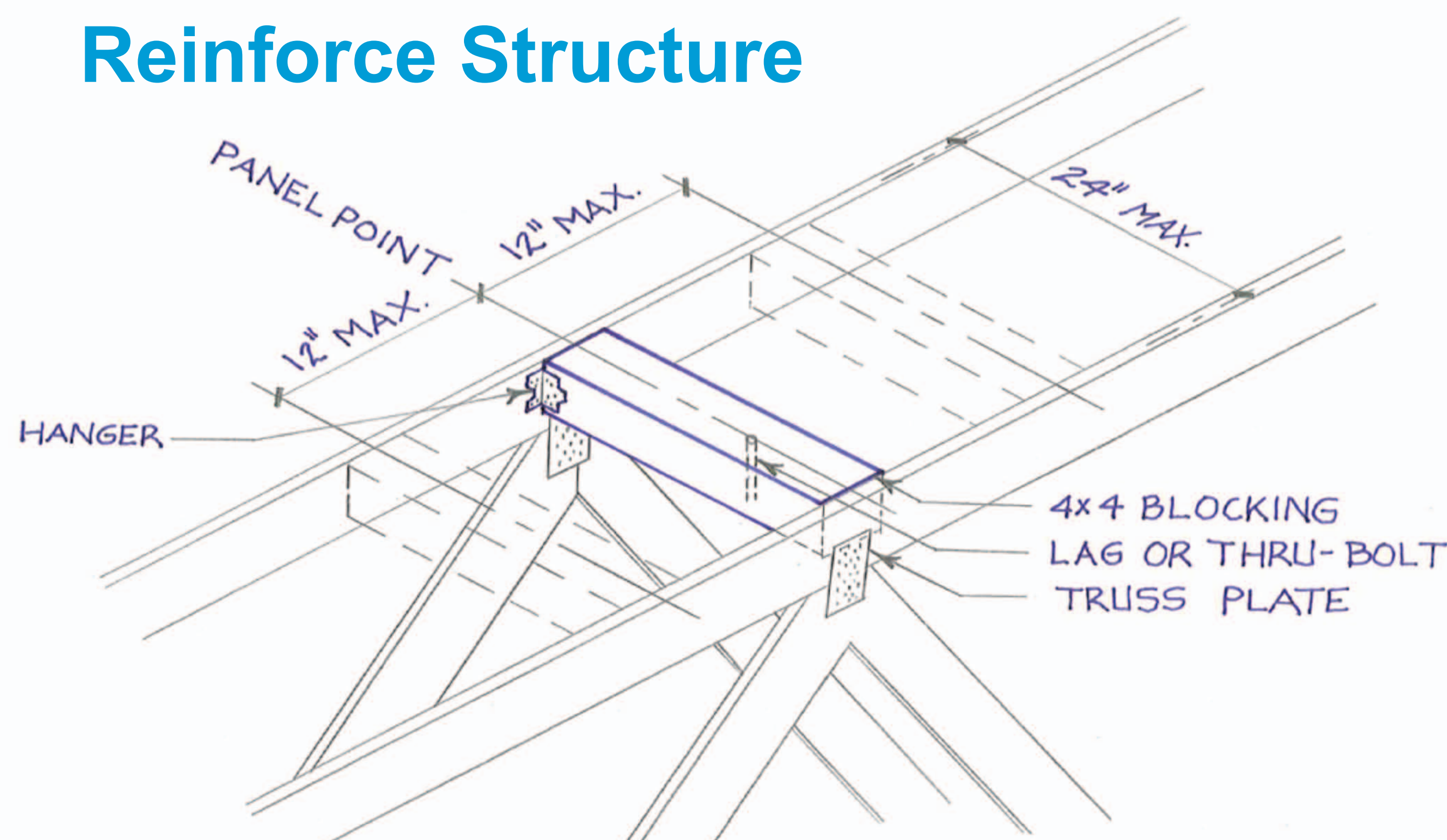
1. Introduction
2. Flow Chart
3. Installer Assessment Checklist
4. Assess Structural Integrity
5. Assess Structural Integrity of Connections
6. Installation Best Practices Checklist
7. Documentation
8. Appendices



Avoid Structural Failure



Reinforce Structure



Solarstruc v2.0 Input numbers in all yellow spaces

Horizontal projection = 0.0 feet

Project address:
Number and street
City and state
Date and time
4/7/2010 15:39

Solar array
Tilt angle (degrees)
Inches = G_o of roof

Height of one panel = inches
Width of one panel = inches
Number of panels in a row =
Number of panels in a column =
Weight of one panel = pounds

Tributary length for supports = inches
Tributary width for supports = inches
Spacing of roof structural members = inches

Height from ground to midpoint of roof = feet
Width of building = feet
Height of midpoint of array above ground = feet
Horizontal distance from top of array to roof edge = feet
Roof slope = /12
Design wind velocity = mph
Exposure category B or C
Ground snow load p_g = psf

LOADS FROM ARRAY TO STRUCTURAL MEMBER

At support
Snow load (p_s) = 0.0 pounds per support
Wind load (F_w) = 0.0 pounds per support
Panel Load (D_p) = #DIV/0! pounds per interior support

Weight of sliding snow
Sliding snow (S) = 0.0 pounds per lineal foot (15 feet max from array)

Drift load
Drift load at array = 0.0 pounds
Drift length = 0.00 feet

Note: Drift and sliding snow loads are added to the base snow loads on the roof. Support loads include snow loads.

15' max
sliding snow
Drift length
supports

Total Load at Support
Dead + 0.75(wind + snow) = #DIV/0! pounds
Dead + wind = #DIV/0! pounds
Dead + snow = #DIV/0! pounds

Base snow load on roof area not covered by panels = 0.0 pounds per square foot